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SUITE 258
SEATTLE, WA 98104

EXAMINER

THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
2625	

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/346,559	Applicant(s) GOLDBERG ET AL.	
Examiner James A. Thompson	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 26 July 2004.
- 2a) This action is **FINAL**.
- 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-23 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-23 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 30 June 1999 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see the Appeal Brief, filed 26 July 2004, with respect to the rejections of claims 1-23 under 35 USC §103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, new grounds of rejection are made in view of newly discovered prior art. Accordingly, new prior art rejections are set forth in detail below.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -
(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-3, 5, 7-8, 12-13 and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Squilla (US Patent 5,898,779).

Regarding claim 1: Squilla discloses a method for authenticating a hardcopy document (column 9, lines 16-21 of Squilla), comprising the steps of recording in a memory a scanned representation of the hardcopy document at a selected resolution (column 9, lines 22-26 of Squilla). Squilla teaches that images can be scanned in by a scanner and stored in computer memory

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(column 9, lines 16-26 of Squilla). As is well-known in the art, scanners scan in hardcopy versions of documents, images, et cetera. Further, a selected resolution for the scanner is inherent in the operation of scanning with said scanner since the scanner requires a particular resolution for obtaining the digital image data from the hardcopy document.

Squilla further discloses generating lossy compressed image data with the scanned representation of the hardcopy document (column 8, lines 34-44 of Squilla); producing an authentication token with the lossy compressed image data (column 8, lines 44-51 of Squilla), the authentication token including one of encrypted image data (column 8, lines 33-34 of Squilla) and hashed encrypted image data (column 8, lines 44-51 of Squilla), the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data (column 8, lines 40-47 of Squilla); and arranging in the memory the scanned representation of the hardcopy document with a digital encoding of the authentication token (column 8, lines 52-64 of Squilla) for rendering at a printer (column 8, lines 58-62 of Squilla) a signed and authenticated hardcopy document (column 5, lines 41-50 of Squilla).

Regarding claim 2: Squilla discloses recording a scanned representation of the signed hardcopy document (column 5, lines 47-50 and column 8, lines 58-62 of Squilla); decoding the authentication token from the scanned representation of the signed hardcopy document (column 9, lines 11-18 of Squilla); authenticating the lossy compressed image data (column 8, lines 50-51 of Squilla) using one of the encrypted image data and the hashed encrypted image data (column 8, lines 44-49 of Squilla); and decompressing the authenticated lossy compressed image data

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(column 9, lines 6-11 of Squilla) for comparison with the signed hardcopy document to determine whether the signed hardcopy document is authentic (figure 9 and column 9, lines 27-38 of Squilla).

Regarding claim 3: Squilla discloses visually comparing the signed hardcopy document with the authenticated lossy compressed image data (figure 9 and column 8, lines 1-16 of Squilla).

Regarding claim 5: Squilla discloses that said step of producing an authentication token is performed with a private key (column 7, lines 21-24 and column 9, lines 33-35 of Squilla) and said step of authenticating lossy compressed image data is performed with a public key (column 7, lines 59-63 of Squilla).

Regarding claim 7: Squilla discloses the step of encoding the authentication token in embedded data (column 8, lines 47-49 of Squilla).

Regarding claim 8: Squilla discloses that said encoding step encodes the authentication token in a halftone pattern (column 8, lines 44-49 and lines 58-62 of Squilla). The authentication token is encoded in the image data (column 8, lines 44-49 of Squilla), which is then printed (column 8, lines 59-62 of Squilla). Thus, the authentication token is encoded in a halftone pattern, specifically the halftone pattern inherently required to print the image.

Regarding claim 12: Squilla discloses that said step of generating lossy compressed image data loses document formatting contained in the scanned representation of the hardcopy document (column 8, lines 20-30 of Squilla).

Regarding claim 13: Squilla discloses that said step of generating lossy compressed image data further comprises the

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step of compressing the scanned representation of the hardcopy document by identifying exemplars and locations of exemplars (figure 1c(17) and column 5, lines 9-15 of Squilla); each exemplar identified representing one or more image segments from the scanned representation of the hardcopy document (figures 1a-1c and column 5, lines 9-15 of Squilla).

Regarding claim 21: Squilla discloses a system (figure 2 of Squilla) for authenticating a scanned representation of a hardcopy document (column 9, lines 16-21 of Squilla), comprising an image compression module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for generating lossy compressed image data with the scanned representation of the hardcopy document (column 8, lines 34-44 of Squilla); an authentication token generator (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for producing an authentication token with the lossy compressed image data (column 8, lines 44-51 of Squilla), the authentication token including one of encrypted image data (column 8, lines 33-34 of Squilla) and hashed encrypted image data (column 8, lines 44-51 of Squilla), the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data (column 8, lines 40-47 of Squilla); and an encoding module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for arranging the scanned representation of the hardcopy document with a digital encoding of the authentication token (column 8, lines 52-64 of Squilla) for rendering at a printer (column 8, lines 58-62 of Squilla) a signed and authenticated hardcopy document (column 5, lines 41-50 of Squilla). The signal processing section (figure 2(26) of Squilla) performs the signal processing of the captured digital image data (column 4, lines 43-46 of

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Squilla). Thus, the image compression module, authentication token generator, and encoding module are each a respective portion of the physically embodied computer processing code which is executed by said signal processing section to perform the corresponding functions on the digital image data.

Regarding claim 22: Squilla discloses a memory (figure 2(64) and column 6, lines 33-37 of Squilla) for recording the signed hardcopy document (column 5, lines 47-50 and column 8, lines 58-62 of Squilla); a decoding module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for decoding the signed hardcopy document to define decoded signed image data (column 9, lines 11-18 of Squilla); an authentication module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for authenticating the decoded signed image data (column 8, lines 50-51 of Squilla) using one of the encrypted image data and the hashed encrypted image data to define authenticated image data (column 8, lines 44-49 of Squilla); a decompression module (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) for decompressing the authenticated image data to define compressed image data (column 9, lines 6-11 of Squilla); and means for comparing (figure 2(26(portion)) and column 4, lines 43-46 of Squilla) the signed hardcopy document with the authenticated hardcopy document to determine whether the signed hardcopy document is authentic (figure 9 and column 9, lines 27-38 of Squilla). The signal processing section (figure 2(26) of Squilla) performs the signal processing of the captured digital image data (column 4, lines 43-46 of Squilla). Thus, the decoding module, authentication module, decompression module, and means for comparing are each a respective portion of the physically embodied computer processing code which is executed

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by said signal processing section to perform the corresponding functions on the digital image data.

Regarding claim 23: Squilla discloses that said image compression module compresses the scanned representation of the hardcopy document by identifying exemplars and locations of exemplars (figures 1A-1C and column 5, lines 4-13 of Squilla); each exemplar identified representing one or more image segments from the scanned representation of the hardcopy document (figure 9 and column 9, lines 26-28 of Squilla).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Merkle (US Patent 5,157,726).

Regarding claim 4: Squilla does not disclose expressly the step of visually comparing a signed hardcopy document with a printed hardcopy document of the authenticated lossy compressed image data.

Merkle discloses the step of visually comparing a signed hardcopy document with a printed hardcopy document of the authenticated image data (column 8, lines 37-51 of Merkle).

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Squilla and Merkle are combinable because they are from the same field of endeavor, namely authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to visually inspect a signed hardcopy document with a printed hardcopy document of the authenticated image data, as taught by Merkle, wherein the authenticated image data is lossy compressed image data, as taught by Squilla. The motivation for doing so would have been to allow a customer to provide evidence of who they say they are, thus increasing the overall security of a document (column 8, lines 50-51 of Merkle). Therefore, it would have been obvious to combine Merkle with Squilla to obtain the invention as specified in claim 4.

6. Claims 6 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Curry (US Patent 5,946,103).

Regarding claim 6: Squilla does not disclose expressly the step of encoding the authentication token in a low intensity background pattern.

Curry discloses encoding digital data in a low intensity background pattern (figure 9 and column 7, lines 60-65 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in a low intensity background pattern, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for

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doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 6.

Regarding claim 9: Squilla does not disclose expressly that said encoding step encodes the authentication token in a hyperbolic halftone pattern.

Curry discloses encoding digital data in a hyperbolic halftone pattern (figure 3; figure 5; and column 4, lines 9-20 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in a hyperbolic halftone pattern, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 9.

Regarding claim 10: Squilla does not disclose expressly that said encoding step encodes the authentication token in a serpentine halftone pattern.

Curry discloses encoding digital data in a serpentine halftone pattern (figure 9 and column 7, lines 60-65 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital

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data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in a serpentine halftone pattern, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 10.

Regarding claim 11: Squilla does not disclose expressly that said encoding step encodes the authentication token in data glyphs.

Curry discloses encoding digital data in data glyphs (figure 9 and column 7, lines 60-65 of Curry).

Squilla and Curry are combinable because they are from the same field of endeavor, namely embedding and encoding digital data within a document or image. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to encode digital data in data glyphs, as taught by Curry, wherein said digital data is the authentication token taught by Squilla. The motivation for doing so would have been to help prevent casual counterfeiting of the document (column 2, lines 38-41 of Curry), and thus provide increased document security. Therefore, it would have been obvious to combine Curry with Squilla to obtain the invention as specified in claim 11.

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7. Claims 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Zdybel (US Patent 5,486,686).

Regarding claim 14: Squilla does not disclose expressly that said compressing step records the exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document.

Zdybel discloses that said compressing step records the exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel). By converting the human-readable text of the image into ASCII format, the human-readable text in the bitmap will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla.

Squilla and Zdybel are combinable because they are from the same field of endeavor, namely digital authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to separately process and compress portions of the digital image data according to the type of data in the section of the bitmap under consideration, as taught by Zdybel. The motivation for doing so would have been to be able to better determine page layout features, control text font, and establish "best guess" vectors for line drawings (column 8, lines 9-18 of Zdybel), which all greatly speed up image processing. Therefore, it would have been obvious to combine Zdybel with Squilla to obtain the invention as specified in claim 14.

Regarding claim 15: Squilla does not disclose expressly that said compressing step records the locations of exemplars at

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a resolution that is less than the selected resolution of the scanned representation of the hardcopy document.

Zdybel discloses that said compressing step records the locations of exemplars at a resolution that is less than the selected resolution of the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel). By converting the human-readable text of the image into ASCII format, the human-readable text in the bitmap, along with its location in the bitmap, will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla.

Squilla and Zdybel are combinable because they are from the same field of endeavor, namely digital authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to separately process and compress locations and portions of the digital image data according to the type of data in the section of the bitmap under consideration, as taught by Zdybel. The motivation for doing so would have been to be able to better determine page layout features, control text font, and establish "best guess" vectors for line drawings (column 8, lines 9-18 of Zdybel), which all greatly speed up image processing. Therefore, it would have been obvious to combine Zdybel with Squilla to obtain the invention as specified in claim 15.

Regarding claim 16: Squilla does not disclose expressly that said compressing step compresses identified portions of the image data at a plurality of compression ratios.

Zdybel discloses that said compressing step compresses identified portions of the image data at a plurality of compression ratios (column 7, line 62 to column 8, line 7 of

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Zdybel). By converting the human-readable text of the image into ASCII format, the human-readable text in the bitmap will be more compressed than other parts of the image when compressed into JPEG format according to the teachings of Squilla.

Squilla and Zdybel are combinable because they are from the same field of endeavor, namely digital authentication and encoding of document data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to separately process and compress portions of the digital image data at different compression ratios according to the type of data in the section of the bitmap under consideration, as taught by Zdybel. The motivation for doing so would have been to be able to better determine page layout features, control text font, and establish "best guess" vectors for line drawings (column 8, lines 9-18 of Zdybel), which all greatly speed up image processing. Therefore, it would have been obvious to combine Zdybel with Squilla to obtain the invention as specified in claim 16.

Further regarding claim 17: Zdybel discloses the step of segmenting text data from pictorial data before compressing the scanned representation of the hardcopy document (column 7, line 62 to column 8, line 7 of Zdybel).

8. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Squilla (US Patent 5,898,779) in view of Walker (US Patent 6,111,953).

Regarding claim 18: Squilla discloses a method for authenticating a hardcopy document (column 9, lines 16-21 of Squilla), comprising the steps of recording in a memory a scanned representation of the hardcopy document at a selected

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resolution (column 9, lines 22-26 of Squilla). Squilla teaches that images can be scanned in by a scanner and stored in computer memory (column 9, lines 16-26 of Squilla). As is well-known in the art, scanners scan in hardcopy versions of documents, images, et cetera. Further, a selected resolution for the scanner is inherent in the operation of scanning with said scanner since the scanner requires a particular resolution for obtaining the digital image data from the hardcopy document.

Squilla further discloses generating lossy compressed image data with the scanned representation of the hardcopy document (column 8, lines 34-44 of Squilla); producing an authentication token with the lossy compressed image data (column 8, lines 44-51 of Squilla), the authentication token including one of encrypted image data (column 8, lines 33-34 of Squilla) and hashed encrypted image data (column 8, lines 44-51 of Squilla), the hashed encrypted image data including the lossy compressed image data and an encrypted hash of the lossy compressed image data (column 8, lines 40-47 of Squilla); and arranging in the memory a digital encoding of the authentication data (column 8, lines 52-64 of Squilla) for rendering at a printer (column 8, lines 58-62 of Squilla) a hardcopy document containing the digital encoding of the authentication data (column 5, lines 41-50 of Squilla).

Squilla does not disclose expressly that said hardcopy document rendered at said printer is a label.

Walker discloses printing digitally encoded authentication data on a label (column 4, lines 31-35 of Walker).

Squilla and Walker are combinable because they are from the same field of endeavor, namely digital data encryption and authentication. At the time of the invention, it would have

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been obvious to a person of ordinary skill in the art to specifically print a label, as taught by Walker, as the type of rendered hardcopy document taught by Squilla. The suggestion for doing so would have been that a label is one of many different types of possible hardcopy outputs that can be used depending upon the particular desires and requirements of the user. Therefore, it would have been obvious to combine Walker with Squilla to obtain the invention as specified in claim 18.

Further regarding claim 19: Walker discloses the step of fixedly attaching the label to the hardcopy document to produce a signed hardcopy document (column 4, lines 34-35 of Walker).

Regarding claim 20: Squilla discloses recording a scanned representation of the signed hardcopy document (column 5, lines 47-50 and column 8, lines 58-62 of Squilla); decoding the authentication token from the scanned representation of the signed hardcopy document (column 9, lines 11-18 of Squilla); authenticating the lossy compressed image data (column 8, lines 50-51 of Squilla) using one of the encrypted image data and the hashed encrypted image data (column 8, lines 44-49 of Squilla); and decompressing the authenticated lossy compressed image data (column 9, lines 6-11 of Squilla) for comparison with the signed hardcopy document to determine whether the signed hardcopy document is authentic (figure 9 and column 9, lines 27-38 of Squilla).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Michael Epstein, US Patent 6,601,172 B1, Patented 29 July 2003, Filed 31 December 1997.

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- b. Mohammad A. Safai, US Patent Application Publication 2002/0191090 A1, Published 19 December 2002, Filed 29 May 1998.
- c. Gary L. Friedman, US Patent 5,499,294, Patented 12 March 1996.
- d. Thomas David Hayosh, US Patent 6,611,598 B1, Patented 26 August 2003, Filed 16 October 2000, Continuation of Application filed 06 January 1999.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is 571-272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



24 May 2006

James A. Thompson
Examiner
Technology Division 2625



~~THOMAS LEE~~
PRIMARY EXAMINER